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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/888,641 | 06/26/2001 | Hiroyuki Nitta | 500.40285X00 | 9093 |

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| EXAMINER | |
|---|---|
| LESPERANCE, JEAN E | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2674 | |

DATE MAILED: 06/03/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/888,641 | Applicant(s) NITTA ET AL. | |
|---|---|---|---|
| | Examiner Ronald Laneau | Art Unit 2674 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *17 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *3-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *14-19* is/are allowed.

6)☒ Claim(s) *3,5,9-11,13 and 20-25* is/are rejected.

7)☒ Claim(s) *4,6-8,12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

***Response to Amendment***

1. The amendment filed on 03/17/04 has been entered. New claims 20-25 are added and claims 3-25 are now pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3, 5, 9, 10, 13, 20, 21, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara et al (2002/0000960) in view of Kitada (US 5,995,070).

As per claims 3, 9, 10 and 24, Yoshihara et al teach a liquid crystal display for executing a display corresponding to display data to be inputted from the outside, comprising: a liquid crystal panel (21), a light source (22) for illuminating said liquid crystal panel, a controlling circuit having a light-emitting region of the back light divided into at least two light-emitting regions and relationships in ratio of light-emitting period of time in comparison of the numbers of division with the case where a light-emitting region of the back light 22 has been divided versus the case where no division has been carried out are shown in table 1 and with increase in the number of division for light-emitting region if the back light 22, a light period of time for each light-emitting region during a period for each sub-frame decreases (page 6, [0071], [0072]). Yoshihara et al do not teach a control circuit that is updating the display data of said display but Kitada teaches updating address that is outputted to the display data unit 5 by reading out the

data stored at the updated address and therefore make it possible to control the light emission driver circuits 11-13 (col. 10, lines 19-27).

It would have been obvious to one of ordinary skill in the art to utilize a control circuit capable of updating the display data as taught by Kitada into the device of Yoshihara et al because it would provide an LED oriented method which makes it possible to generate color displays on high quality with a LED display apparatus having a small number of dots and low resolution (col. 3, lines 4-8).

As per claims 5 and 13, Yoshihara et al teach a display wherein the respective pixels are in an undisplayed state (ratio in extinguishing light of the back light 22 is 0 % as claimed (page 6, [0070]).

As per claims 20, 21, and 25, Yoshihara et al teach a liquid crystal display as claimed (see abstract).

***Allowable Subject Matter***

7. Claims 4, 6-8, 12, 14-19, 22, and 23 are allowed.

None of the references, either singularly or in combination, teaches or even suggests:

As per claim 4, a display apparatus wherein said time having said 1st light-emission luminance is longer that said time having 2nd light-emission luminance, said controlling circuit controlling said time ratio of said 1st light-emission luminance in said period to be 50 % or smaller when said display data is a motion-frame picture, and to be 50 % or larger when said display data is a freeze-frame picture.

As per claims 6-8, a display apparatus wherein said controlling circuit comprises:

a data storing unit for storing said display data by the amount of at least 1 frame,

a data comparing unit for comparing corresponding pixels between said display data stored in said data storing unit and said display data to be inputted, and

a pulse controlling unit for outputting a signal in correspondence with a comparison result by said data comparing unit, said signal controlling said time ratio of said 1st light-emission luminance in said period.

As per claim 12, a display apparatus wherein said controlling circuit outputs a signal so that a time-period of said 2nd light-emission luminance will start immediately after a writing of said display data in a region has been terminated, said signal indicating said starting time and a time-period of said 1st light-emission luminance, said display data being varied most in said region among respective display regions on said display panel, said respective display regions corresponding to said plurality of light sources.

As per claims 14, 15, and 22, a display apparatus for executing a display corresponding to display data to be inputted from the outside, comprising: a tone controlling circuit for updating a set value in at least 1 specified tone position in accordance with said luminance distribution data, and for determining a tone characteristic between said updated respective set values on a 1-frame basis with the use of a predetermined arithmetic-calculation formula.

As per claims 16-19 and 23, a display apparatus for executing a display corresponding to display data to be inputted from the outside, comprising: a luminance distribution detection controlling circuit for detecting, in accordance with said image data to be inputted, luminance distribution data by the amount of at least 1 frame of said image data, and

a light-source controlling circuit for controlling at either of a light-emission time-period and a light-emission time of said light-source in accordance with said luminance distribution data.

***Response to Arguments***

4. Applicant's arguments filed 03/17/04 have been fully considered but they are not persuasive.

Applicant's arguments about the newly added limitations are moot in view of the newly added reference in Kitada (US 5,995,070). The rejection finally stands.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6.00 PM or via email: ronald.laneau@uspto.gov.

7. **Any response to this final action should be mailed to:**

**Box AF**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ronald Laneau
Examiner
Art Unit 2674

RICHARD HJERPE 5/28/04
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

rl
May 26, 2004